

APPLICATION FOR
UNITED STATES LETTERS PATENT

SPECIFICATION

TO ALL WHOM IT MAY CONCERN:

Be it known that I, Raymond Brown, a citizen of the United States of America, and resident of the State of Vermont, having a postal address of 1657 Jerusalem Hill, Rochester, Vermont, 05767, have invented a new and useful "**Rotary Strap Tensioning Apparatus**", of which the following forms the specification.

"Rotary Strap Tensioning Apparatus"

CROSS REFERENCE TO RELATED APPLICATIONS

This invention was the subject matter of Document Disclosure Program
Registration Program No. 529,216, that was filed in the United States Patent and
5 Trademark Office on April 10, 2003.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not applicable.

REFERENCE TO MICROFICHE APPENDIX

10 Not applicable.

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to the field of cargo strap tensioning devices in
general and in particular to an apparatus that connects to a strap tensioning hub and is
15 provided with a handle for rotating the hub.

Description of Related Art

As can be seen by reference to the following U.S. Patent Nos. 5,425,154; 5,524,505; 6,092,437; and, 6,196,092, the prior art is replete with myriad and diverse cargo strap tensioning devices.

5 While all of the aforementioned prior art constructions are more than adequate for the basic purpose and function for which they have been specifically designed, they are uniformly deficient with respect to their failure to provide a simple, efficient, and practical strap tensioning apparatus that quickly and securely engages the apertured ratchet hub that is provided on most flat bed trailers.

10 As the present time, these ratchet hubs are either rotated by hand, which is extremely difficult, or by inserting a steel bar through the transverse bore in the ratchet hub which is very cumbersome and usually results in bruised knuckles.

As a consequence of the foregoing situation, there has existed a longstanding need among truckers for a new and improved strap tensioning apparatus that can
15 releasably engage a tensioning ratchet hub in a secure manner and can easily rotate the ratchet hub to place a desired tension on the load securing strap, and the provision of such a construction is a stated objective of the present invention.

BRIEF SUMMARY OF THE INVENTION

Briefly stated, the strap tensioning apparatus that forms the basis of the
20 present invention comprises in general a collar unit, a locking unit and a handle unit wherein the locking unit releasably attaches the collar unit to a strap tensioning ratchet hub to apply tension to the load securing strap.

As will be explained in greater detail further on in the specification, the collar unit comprises a collar member dimensioned to slidably engage the periphery of a
25 ratchet hub provided with a transverse bore wherein the collar member is further provided with an aperture that is alignable with the transverse bore on the ratchet hub.

In addition, the locking unit comprises a generally L-shaped lever arm member that is pivotally attached to the collar member wherein, the lower segment of the L-shaped lever arm member is provided with a downwardly depending post that is
30 dimensioned to pass through the peripheral aperture in the collar member and extend into the transverse bore in the ratchet hub.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

These and other attributes of the invention will become more clear upon a thorough study of the following description of the best mode for carrying out the invention, particularly when reviewed in conjunction with the drawings, wherein:

5 FIG. 1 is a perspective view of the tensioning apparatus that forms the basis of the present invention prior to engagement with the ratchet hub;

 FIG. 2 is a top plan view of the arrangement depicted in Fig. 1;

 FIG. 3 is a perspective view showing the tensioning apparatus partially engaged with the ratchet hub; and,

10 FIG. 4 is a perspective view showing the tensioning apparatus fully engaged with the ratchet hub.

DETAILED DESCRIPTION OF THE INVENTION

As can be seen by reference to the drawings, and in particularly to FIG. 1, the strap tensioning apparatus that forms the basis of the present invention is designated
15 generally by the reference number **10**. The apparatus **10** comprises in general a collar unit **11**, a locking unit **12**, and a handle unit **13**. These units will now be described in seriatim fashion.

As shown in Figs. 2 through 4, the collar unit **11** comprises a hollow cylindrical collar member **20** having a single peripheral aperture **21** and a pair of outwardly
20 projecting apertured ear elements **22 22** the purpose and function of which will be described presently.

In addition, the locking unit **12** includes a generally L-shaped lever arm **30** which is pivotally suspended in the apertured ear element **22** via a pivot rod **31** wherein, the lower segment **32** of the lever arm **30** is provided with a downwardly
25 extending post **33** and the upper segment **34** of the lever arm **30** is attached to one end of a spring element **35** the other end of which is operatively connected to the collar member **20** to bias the post **33** into penetrating engagement with the peripheral aperture **21** in the collar member **20**.

As can best be seen by reference to Figs. 1 and 4, the handle unit **13**
30 comprises a generally L-shaped handle member **40** having a shaft portion **41** fixedly secured to the collar member **20** and a rotating handle element **42** disposed

perpendicular to the free end of the shaft portion **41** for reasons that will be explained presently.

By now it should be apparent that the purpose and function of the strap tensioning apparatus **10** is to engage and rotate a strap tensioning ratchet hub **100** having a transverse bore **101**.

In order to accomplish that objective, the upper segment **34** of the lever arm **30** is retracted to remove the post **33** from engagement with the peripheral aperture **21** in the collar member **20**. The collar member **20** is then slipped over the ratchet hub **100** to align the aperture **21** with the transverse bore **101** of the ratchet hub **100** whereupon, the upper segment **34** of the lever arm **30** is released so that the post **33** becomes engaged in the transverse bore **101** and the handle member **40** can cause the ratchet hub **100** to rotate in a well recognized manner.

Although only an exemplary embodiment of the invention has been described in detail above, those skilled in the art will readily appreciate that many modifications are possible without materially departing from the novel teachings and advantages of this invention. Accordingly, all such modifications are intended to be included within the scope of this invention as defined in the following claims.

Having thereby described the subject matter of the present invention, it should be apparent that many substitutions, modifications, and variations of the invention are possible in light of the above teachings. It is therefore to be understood that the invention as taught and described herein is only to be limited to the extent of the breadth and scope of the appended claims.